

**REMARKS**

By this Amendment, claims 1, 4-6, 9, 12 and 21 are amended, claims 2, 3, 10 and 11 are cancelled, without prejudice or disclaimer of the subject matter recited therein, and claims 22-24 are added. Therefore, claims 1, 4-9 and 12-24 are pending in this application. No new matter is added. Reconsideration of the application is respectfully requested.

The Office Action makes the Election of Species Requirement final and withdraws claims 15-20 from further consideration. Applicants respectfully submits that these claims should be rejoined upon the allowance of their base claim, which is generic to all species.

The Office Action rejects claim 6 under 35 U.S.C. §112, first paragraph, stating that the specification and claims fails to teach how the polarization state of a reconstructed beam obtained from the re-recorded hologram could be different from a polarization state of a reconstructed beam obtained from the hologram preceding the re-recording as recited in claim 6. This feature is described in the specification at, for example, page 24, line 22-page 25, line 8. Applicants respectfully submit that one of ordinary skill in the art would understand that the polarization state of a reconstructed beam obtained before and after the re-recording can be easily changed by any well known means, for example, by rotating a polarization plate through which the beam passes. As such, a person skilled in the art would have been enabled to practice this feature of claim 6 without undue experimentation. Therefore, Applicants respectfully assert that claim 6 is enabled. Accordingly, withdrawal of the rejection is respectfully requested.

The Office Action objects to claims 21 and 1-14.

With respect to an objection related to the term "re-record and retain," claims 2 and 10 are canceled and the objected to language is incorporated in claim 21 as corrected to obviate the objection. Claims 3 and 11 are canceled, and the objected to language is incorporated in

claim 22 as corrected to obviate the objection. Claims 4 and 12 are amended to obviate the objection.

With respect to the phrase "the same position as the predetermined position as a hologram" recited in claim 1 and the phrase "the different position from the predetermined position as a hologram" recited in claim 9, the term "as a hologram" is moved to improve the readability of the claims. With respect to the terms "same position" and "different position" recited in claims 1 and 9, respectively, claims 1 and 9 are amended as suggested by the Office Action.

With respect to the logical relationships between the consequent and intermediate re-recording and retaining processes, Applicants respectfully believes that the above-described amendments to the claims obviate the objection.

With respect to the phrase "when...", claims 2 and 10 are canceled and the objected to language is incorporated in claim 21 as corrected to obviate the objection. Claims 3 and 11 are canceled, and the objected to language is incorporated in claim 22 as corrected to obviate the objection. Claims 4 and 12 are amended to obviate the objection.

At least for these reasons, Applicants respectfully request withdrawal of the objection to claims 21 and 1-14.

The Office Action rejects claim 21 and 9-11 under 35 U.S.C. §102(b) over U.S. Patent No. 5,016,953 to Moss et al. (Moss). This rejection is respectfully traversed.

Claim 21 recites, *inter alia*, that the subsequent reproducing and retaining is preformed when an intensity of a reconstructed beam has fallen to a predetermined value or less. This feature was recited in canceled claim 10. That is, as described in the specification at, for example, page 18, lines 1-10, the re-recording is made if the intensity of the reconstructed beam detected by a photo-detector 40 is determined equal to or less than a threshold value.

The Office Action asserts with respect to canceled claim 10 that Moss teaches that a final copy of the re-recording and retaining hologram is made at the end of process which means it implicitly meets this feature concerning the intensity of the reconstruction beam. Applicants respectfully disagree with this assertion.

Moss teaches reducing noise in computer generated holograms by overexposing a hologram to be copied and repeating the process to obtain a final hologram having desired efficiency. See the Abstract. As described at col. 5, lines 1-27, Moss teaches that a successive hologram has a greater brightness uniformity than a previous hologram, and that the final hologram is made when a desired brightness uniformity is reached to provide better overall brightness. See also Fig. 1. Thus, Applicants respectfully submit that Moss performs the subsequent reproducing and retaining until a desired brightness uniformity is reached, rather than when an intensity of a reconstructed beam has fallen to a predetermined value or less, as recited in claim 21.

Therefore, Applicants respectfully submit that Moss cannot reasonably be considered to implicitly or explicitly teach the features recited in claim 21. Thus, claim 21 is patentable over Moss.

The rejection of canceled claims 10 and 11 is moot. Claim 9 is allowable at least for its dependence on an allowable base claim, as well as for the additional features it recites.

The Office Action rejects claim 21, 9-11 and 13 under 35 U.S.C. §102(e) over U.S. Patent No. 6,707,585 to Tanaka et al. (Tanaka). This rejection is respectfully traversed.

Claim 21 recites, *inter alia*, that the subsequent reproducing and retaining is preformed when an intensity of a reconstructed beam has fallen to a predetermined value or less. This feature was recited in canceled claim 10.

The Office Action asserts with respect to canceled claim 10 that Tanaka implicitly teaches that the conditions concerning the intensity of the reconstruction beam are met.

However, although Tanaka appears to recognize at col. 2, lines 27-47 that a deterioration of reproduction occurs because the irradiation of reference light gradually erases the recorded hologram, Tanaka does not implicitly or explicitly teach or suggest what causes the reproduction information to be re-recorded and retained. In addition, Tanaka does not teach or suggest any intensity sensor or the like that would measure the intensity of the reconstructed beam or that would compare the intensity of the current reconstructed beam with the previous one. Thus, one of ordinary skill in the art would not be taught by Tanaka to perform the subsequent reproducing and retaining as recited in claim 21. Thus, such assertion by the Patent Office is improper.

Therefore, Applicants respectfully submit that claim 21 is patentable over Tanaka.

The rejection of canceled claims 10 and 11 is moot. Claims 9 and 13 are allowable at least for their dependence on an allowable base claim, as well as for the additional features they recite.

The Office Action rejects claims 1-7 under 35 U.S.C. §103(a) over Tanaka in view of U.S. Patent No. 6,806,982 to Newswanger et al. (Newswanger). This rejection is respectfully traversed.

The rejection of canceled claims 2 and 3 is moot.

Newswanger does not overcome the deficiencies of Tanaka. Therefore, claims 1 and 4-7 are allowable at least for their dependence on allowable base claim, as well as for the additional features they recite.

For example, claim 1 recites re-recording the reproduced information as a hologram in the same position on the optical recording medium as the predetermined position from which the information was reproduced. The Office Action admits that Tanaka does not teach or suggest this feature, but asserts that Newswanger does.

Applicants respectfully submit that this asserted combination is improper because Tanaka teaches away from such a combination.

That is, Tanaka specifically teaches that the re-recording is taken place at a position different from the predetermined position from which the information was reproduced, and that is the heart of Tanaka's invention as shown in Fig 5. As described at col. 9, line 63-col. 10, line 11, Tanaka teaches that the reproducing reference light beam 12c is irradiated to the reproduction channel PC to generate the phase conjugate wave to reconstruct a real image on the common image-formation plane 201, and the reproduced real image is used as a signal light to be incident on the recording channel RC2 of the recording medium 10. As described at col. 10, line 60-col. 11, line 5, Tanaka teaches that because the signal processing from light to light provides a direct rewriting operation in holographic recording and reproducing apparatus of Tanaka's invention, the device configuration is simplified. Therefore, the proposed modification would alter the principal of operation of Tanaka's invention. Accordingly, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to combine Tanaka and Newswanger.

The Office Action rejects claim 8 under 35 U.S.C. §103(a) over Tanaka and Newswanger, further in view of U.S. Patent No. 6,452,890 to Kawano et al. (Kawano). This rejection is respectfully traversed.

As discussed above, Tanaka and Newswanger are not properly combinable. Kawano does not overcome of the deficiencies of Tanaka or Newswanger. As such, claim 8 is allowable at least for its dependence on an allowable base claim, as well as for the additional features it recites. Therefore, withdrawal of the rejection of claim 8 is respectfully requested.

The Office Action rejects claim 12 under 35 U.S.C. §103(a) over Tanaka. This rejection is respectfully traversed.

Claim 12 is allowable at least for its dependence on an allowable base claim, as well as for the additional features it recites. Therefore, withdrawal of the rejection of claim 12 is respectfully requested.

The Office Action rejects claim 14 under 35 U.S.C. §103(a) over Tanaka in view of Kawano. This rejection is respectfully traversed.

Kawano does not overcome the deficiency of Tanaka. As such, claim 14 is allowable at least for its dependence on an allowable base claim, as well as for the additional features it recites. Therefore, withdrawal of the rejection of claim 14 is respectfully requested.

Claims 22-24 are added by this Amendment.

New independent claim 22 incorporates the features in original claim 21 and canceled claims 3 and 11 and recites that the subsequent reproducing and retaining is preformed when the number of times of reproduction has exceeded a predetermined value. As discussed above, none of the applied art implicitly or explicitly teaches or suggests controlling the re-recording of the reproduced information based on the number of times of reproducing the information. Accordingly, Applicants respectfully submit that claim 22 is patentable over the applied references.

New dependent claims 23-24 recite features of claims 1 and 9, respectively. These claims are allowable at least for their dependence on allowable base claim, as well as for the additional features they recite.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:  
Petition for Extension of Time

Date: November 2, 2005

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